

# American Fern Journal

Vol. 15

JULY-SEPT., 1925

No. 3

## Fern Collecting in Haiti.<sup>1</sup>—I

E. C. LEONARD

Imagine my surprise and excitement when told, on returning to the National Museum from military service in the fall of 1919, that I was to have the opportunity of collecting plants in Haiti, a region in which little work of this nature had been done. It was suggested that I accompany Dr. W. L. Abbott, of Philadelphia, a naturalist old in travel and experience, who wanted particularly to study the bird life of Gonave Island and to complete certain series he had collected on a former visit. Dr. Abbott, I might add, has long been a benefactor of the United States National Museum. His chief interest is in ornithology, but aside from birds he has made extensive collections of mammals, as well as of ethnological material, chiefly in Africa, Tibet, the East Indies, and Hispaniola. The present opportunity was for me the chance of a lifetime! I did not even consider the possible difficulties, but set about at once to make the necessary preparations.

Thus, one cold day in February, 1920, I found myself actually en route for New York to meet Dr. Abbott, on the way to Haiti. There had been a severe storm in the

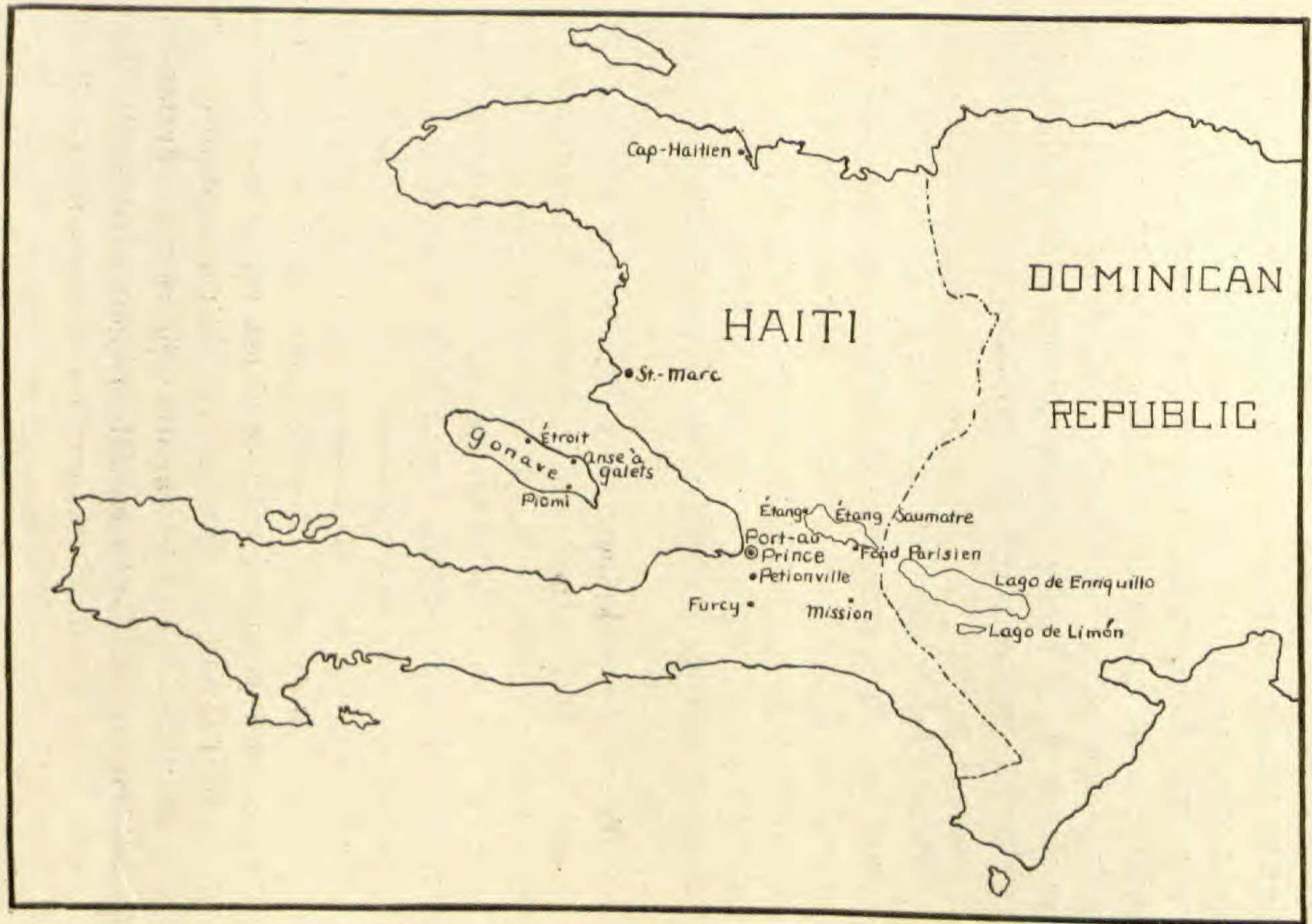
[Vol. 15, No. 2 of the JOURNAL, pages 35-68, plates 3 and 4, was issued June 30, 1925.]

<sup>1</sup> Published by permission of the Secretary of the Smithsonian Institution.

Northeast. The streets of the city, buried in snow to a depth of several feet, were completely obstructed in many places, and vehicles were forced to run on the sidewalks, which for the most part had been kept clear. Fortunately we had sent on our heavy baggage ahead of time. As it was, we experienced a good deal of trouble in reaching the wharf with our hand bags. Three days later found us passing through the warm Caribbean on the S. S. Colon, with the cold and snow of New York far behind. On the evening of the following day the blue ranges of the northern peninsula of Haiti, close to our left, and the damp woody smell of the land breeze blowing off the Cul-de-Sac both told us we were nearing port. Next morning we were walking the hot white streets of Port-au-Prince, the capital of Haiti.

#### PORT-AU-PRINCE

To those who know Port-au-Prince the place is always associated with the great twin-towered cathedral that rises in its midst far above all other structures. The city itself, especially the older part, is built on French plans; the sidewalks are at any height, and unless you are especially active it is greatly to your advantage to walk in the street. This seems to be expected, however, as the sidewalks are mostly used for displaying wares and country produce. Notwithstanding the encroachments of the ubiquitous flivver and the abounding traffic of a single short street car line, the rickety carriage with its clanging bell and equally rickety steed still plays a great part in the transportation of passengers. Pretentious suburban residences, analogous to the French châteaux, are beautifully hidden in walled gardens filled with tall palms, brilliant bougainvilleas, sabliers (*Hura crepitans*), and many other showy plants.



SKETCH MAP OF HAITI, SHOWING THE LOCALITIES VISITED

The climate of Port-au-Prince, cooled by the land breeze at night and somewhat tempered by a sea breeze during the day, is not unpleasant. Early each morning the streets are swept by the white-clad Département Sanitaire, and for neatness they put to shame many of our American cities. In the heat of mid-day, aside from the "clack-clack-clack" of an occasional coffee fan, a drowsy quietness pervades the streets, but toward evening they awaken to business and the liveliness of pleasure-bent citizens.

We selected for headquarters the Hôtel de France, on account of its nearness to the wharf and railroad stations. As Dr. Abbott took over the responsibility of obtaining permits and arranging baggage for our first inland trip, I was left with some spare time. Of this I took advantage by making small excursions about the city for plants.

South of the wharf and near the seashore were several vacant lots and unused grassy streets. The ground, intersected by ditches, was marshy in places and mostly covered by a sod of grasses, sedges, and various tropical weeds. The only ferns found here were a few large plants of *Acrostichum excelsum*.

Bordering the city on the south are low foothills, cut by dry rocky ravines. The slopes are arid, rather steep, and generally covered with thickets. Here *Cheilanthes microphylla* was occasional. *Adiantum melano-leucum* grew abundantly on low limestone cliffs exposed by road-grading; this, *A. tenerum*, *Dryopteris serra*, and *Pteris longifolia* were found commonly also in the dry ravines.

#### ST. MARC

On the 24th of February we began the first stage of our trip inland, boarding a train early in the morning for St. Marc. The entire day was required to reach our

destination, 60 miles away, and darkness overtook us long before the train finally stopped for the last time. A large crowd of natives were gathered at the station to meet us. In the scramble for baggage an over-solicitous individual shattered the baggage-master's only lantern. Then in the darkness and confusion that followed the whole crowd of spectators seemed to join in with the passengers to unload the baggage car. Eventually we were able to rescue our belongings and, with the help of two husky natives, convey them safely to the hotel.

From the viewpoint of a fern collector this region proved rather uninteresting. *Notholaena trichomanoides pilosa*, an ally of our southwestern *N. sinuata*, was occasional on the dry rocky slope rising abruptly from the seashore at the north side of the city. *Dryopteris normalis* and *D. patens* were common along irrigation ditches.

#### GONAVE ISLAND

Anse à Galets, a small bay on the northeastern coast of Gonave Island, was our first objective. After a few days at St. Marc, we set sail in a fishing boat, with a crew of captain, mate, and cook. Our craft was a small open affair, with a single triangular sail both ragged and patched, bearing the trademarks of several well-known American flour companies. A new chum, as Dr. Abbott calls an initiate in tropical exploration, might wonder with good cause how such a craft could keep afloat, especially in the rough water often whipped up by stiff breezes in the bay, but somehow we managed to cover the 40 miles in safety. Once on shore we pitched our first camp under a clump of *lignum vitae* trees not far from the small village of Anse à Galets.

Gonave Island is about 30 miles long and 10 miles wide, and consists of a low mountain range bordered

by a belt of foothills. On its north coast these merge gradually to a level beach, fringed by mangroves, and a reef-enclosed belt of still water, but on the south side they descend rather abruptly into deep sea. Interspersed among the white barren "salines" of the coast region are groups of small trees belonging to the Combretum family (*Conocarpus erectus*) and thorny mesquite (*Prosopis juliflora*); the flat bushy tops of the latter, viewed from a distance, look remarkably like a green meadow. The *Conocarpus* trees, singular in their resemblance to apple trees, give the effect of old orchards along the beach. Dense thickets cover the arid mountain sides and foothills, and the upland, called "La Table," opens into large grassy tracts with occasional trees or shrubs. The broken forest yields a fair amount of lignum vitae and logwood. Scarcity of water and, in many places, large outcrops of bare coral rock restrict agricultural activities chiefly to the few valleys containing streams, but the grassy uplands, freshened by heavy dews, furnish excellent grazing land. Apparently only goats are utilized for dairy purposes, and that on a small scale; the live stock is raised chiefly for meat.

The Haitian farmers grow their crops in clearings or "jardins." With their machetes they laboriously clear the ground of trees and most of the underbrush, which after drying is burned. Then sweet potatoes and corn are planted in the ash and thin soil, and usually are left to take care of themselves until harvest. Cotton, cassava, castor beans, and "pois congo" (*Cajanus indicus*), a bean-bearing shrub, grow more or less spontaneously. The farming equipment is in no way elaborate, consisting of a machete and occasionally a hoe. Other arts and industries are equally primitive. This was illustrated in the valley of Anse à Galets, where men were getting out lumber to build a flour mill. The large logs

were supported on an elevated platform and with the aid of a wedge the men, one above and one below, would slowly work a badly worn saw through the hard wood. Boards could be produced by this method at a rate of one every two or three days.

Sawed lumber, however, is not used in the construction of the simple one- or two-roomed, gabled structures—the average Haitian house. Usually, upright poles are first planted in the ground and on these plates and rafters are set, the whole then being fastened together by wooden pins or tough vines. Afterward the walls are filled in with a wicker-work of twigs, which is finally plastered inside and out with a mixture of mud and lime. The roof is covered with thick grass thatch. On account of neglect to employ diagonal braces the houses often acquire a considerable list. Windows are absent, as a rule, because the Haitians seem not to consider ventilation beneficial, and prefer being hermetically sealed in during the night, possibly as a protection against mosquitoes or a fancied ill effect of the night air.

Aside from occasional officials, white men are seldom seen on Gonave Island; consequently the natives have things pretty much their own way. As a rule we were met with an effuse politeness—a low bow, a lifted hat, and a pleasant “Bon jour, monsieur”; but sometimes a woman or child in the Table region would become hysterical and rush away screaming “Blanc! Blanc!” Dr. Abbott, much respected on account of his tall commanding appearance, they called “Papa.” Of course, even in our own highly civilized country the ways of a naturalist are sometimes incomprehensible, but here a plant collector could mean only one thing, namely, “boco,” or gathering herbs for medicine or magic. It was useless to tell them otherwise.

The Haitians, where undisturbed, are still supposed to carry on their old voodoo rites. An opportunity was

offered me on Gonave Island to verify this fact, but unarmed and alone I did not think it prudent to investigate too thoroughly these ceremonies, which are generally reported to be rather dangerous for an unescorted visitor. However, while covering some new territory on "La Table," my attention was attracted by a distant continuous roll of tom-toms, with occasional yells. Working slowly toward the sound, under cover of the tall grass, I was able to get very close to the place, when a woman in a near-by hut spied me and gave the alarm. Instantly about twenty natives, rather too suggestive of the kind described by certain great African explorers, materialized out of the thick guinea grass and, although not violently demonstrative in any way, intimated very definitely that I had no business there. So, assuming a preoccupied air, I told them, as best I was able, that while "*cherchant les plantes pour remède*" I had become lost and wished to go coastward. This information seemed to satisfy the men and they soon disappeared, leaving me in the charge of several women whom I finally managed to elude. I then continued my day's collecting in a direction opposite to that of the festivities. This particular ceremony lasted three days.

No ferns were to be found either in the coastal areas or the arid thicketed plains bordering the central range, but "La Source," a large valley near our camp, supported a comparatively rich growth. The stream, fed by a good-sized spring near the head of the valley, flows about a half-mile and then sinks into the dry soil. The banks are steep, rocky, and—away from the immediate vicinity of the stream—rather dry; but wherever the soil is deep enough and clearings have not been made, the slopes are thickly covered with vegetation. In many places the upper slopes, especially at the head of the valley, are broken by bare cliffs, crevices, and large piles



of jagged coral rock. On the summit of one of the latter was a thick growth of *Polypodium polypodioides*. *Adiantum melanoleucum* and *Pteris longifolia* were common on the lower slopes near water, while *Cheilanthes microphylla* and *Polypodium exiguum* were confined to the upper dryer regions. *Dryopteris guadalupensis* was common on mossy rocks about the spring. One large boulder near the stream was covered with an abundant growth of *Selaginella stolonifera*. A single plant of the silver-fronded *Pityrogramma calomelaena* grew in the damp soil near the water.

On the grassy table land, occasional cliffs and dry ravines furnished shelter for an abundance of *Adiantum melanoleucum*, *A. tenerum*, *Pteris longifolia*, and *Asplenium dentatum*. Large thickets of *Pteridium caudatum* covered some of the more open and level areas, many of these plants being six feet high.

After two weeks in the vicinity of Anse à Galets we broke camp and, taking advantage of quiet water enclosed by the reef, sailed about ten miles along the coast to the northwest, where we established a new camp on the barren outskirts of a small fishing village called Étroit. The general character of this region is similar to that of Anse à Galets, namely, an arid coast with salines, mangroves, and *Conocarpus* trees, a dry thicketed plain, foothills, and mountain slopes, an open summit, and occasional ravines. One ravine, "La Grande Source," is exceptionally large and well watered for this island. The bed is rocky and the sides steep and rugged. Nearly all the trees have been removed. Here, in addition to the ferns observed at Anse à Galets, were found *Tectaria heracleifolia*, *T. hippocrepis*, *Cyclopeltis semicordata*, *Adiantum cristatum*, and *Dennstedtia rubiginosa*.

Our work on the north coast of Gonave Island now finished, we returned to Port-au-Prince and here made preparations for a second trip, inland. We had planned to explore the lake regions east of the Cul-de-Sac and thence northward to Grand Bois, but civil troubles in that region forced us to change the latter part of our plan. We were able, however, to work the region south of Étang Saumatre, first on the southeastern shore in a region called Fond Parisien, and later in a portion of the La Selle mountains in the vicinity of Mission.

### CUL-DE-SAC

The Cul-de-Sac, a large level plain, probably once the bed of an inland bay, is bordered on the west by the Bay of Port-au-Prince, on the east by Étang (or Lake) Saumatre, and on the south and north by a series of mountain ranges which arise rather abruptly on the north, but on the south are bordered by a considerable belt of foothills. Much of the Cul-de-Sac region is watered by streams which burst forth on the lower levels of the plain after having flowed a long distance underground through the dry hill regions from the mountains. The greater part of the arable land is given over to sugar growing, while thorny cactus thickets cover the arid portions.

Étang Saumatre, as well as Lake Enriquillo a short distance to the east, is salty, being apparently a remnant of sea cut off by an uplift of the Cul-de-Sac. Although the greater part of its shore bordering the Cul-de-Sac is arid, the northeastern portion is watered by a series of large springs which flow through a belt of meadows the vegetation of which is composed chiefly of small sedges. *Acrostichum excelsum* was common along the wet banks of the streams, and *Azolla caroliniana* grew abundantly on sluggish water.

Crossing to Fond Parisien, on the southern shore of the lake, we entered a region which, although supporting an especially interesting desert flora, was a disappointment so far as ferns were concerned. Only two species, *Dryopteris serra* and *D. patens*, were found, these growing along irrigation ditches and in wet meadows. While here we witnessed an extraordinary flight of butterflies. A hard shower following a very long drought brought to life millions of them and for several days they moved steadily westward in a continuous yellow cloud.

Chief among our difficulties here as in other parts of Haiti was the problem of procuring reliable men and a sufficient number of animals to transport our outfit. The small donkey, so typical of Haiti, seems to be more numerous than horses and mules. He is a gentle inoffensive creature but strong and well adapted to carrying heavy loads on the narrow and often slippery trails that lead into the mountainous regions of the interior. An interesting sight it is to see these little fellows coming into town on market days, almost hidden by their bulky loads of produce but bearing, on top of all, their respective owners, usually a market woman clad in bandana, mother-hubbard, and counter-less slippers that flop rhythmically to the jogging of her "bête." There is seldom much trouble in obtaining one or two animals for riding purposes, but as to hiring four or five—that is something extraordinary. Usually it results in hiring several men, each to accompany his own beast, whereas one would have been sufficient.

For our journey to Mission, about fifteen miles southward in the La Selle Mountains, we were able finally, through the influence of a local American planter, to procure four transports and a guide. The first part of the trip was uneventful, but toward the end we experienced some difficulty, as the way lay through a dry river

bed covered with round stones which made walking tiresome if not dangerous. Dr. Abbott and his two animals were soon outdistanced by the two I was endeavoring to follow, and behind him limped our cook, woefully bemoaning the fact that he was "malade de jambes"; and last of all, and practically out of sight, came our guide. Luckily the animals knew the route, otherwise we might never have found Mission.

WASHINGTON, D. C.

---

## Ferns—Facts and Fancies About Them—VI

F. E. CORNE

Would not some of you like to try the experiment of sowing fern spores and watching the result? It is not at all a difficult thing to do and is very interesting. The spores of hothouse or house ferns may be bought from florists, and those of our native wild plants one can gather. Place any ripe fertile frond in press between white papers, and in a few days, as soon as it is quite dry, if carefully lifted it will leave on the white paper its exact impress composed apparently of fine brown dust, but in reality, as may be easily seen under the microscope, made up of innumerable spores. Spores will start growing upon almost any porous surface where it is moist and warm, as on wet peat or sand, and sporelings are often found on the outsides of flower pots in hothouses. To grow them properly fill a fern or bulb dish half full of broken bits of flower pots or other drainage material. On top of this a thin layer of moss, then about an inch of finely pulverized loam. This should be sterilized by placing the pot for an hour or so in boiling hot water, or by baking it in an oven. Then when cool enough and thoroughly moist but not wet,